

## SECTION 2

### OPERATION

#### 2.1 PREPARATION FOR OPERATION

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##### 2.1.1 Initial Checks

Since the storage tanks for the developer and fixer solutions are located in an area that is separate from the processor, check the valves associated with these tanks to be sure that they are open. Check the air pressure from the building air system to the processor. With the reducer control in the air line over the take-off end of the solution control panel, reduce air pressure for process control to 25 psi. With the air reducer control built into the top of the feed end of the solution control panel, reduce air for the replenisher system to 1 1/2 psi.

Perform daily check as described in Section 4.2.

##### 2.1.2 Installing Racks and Crossovers

Remove the four covers over the processing (wet) section to expose the 16 tanks. The tanks are numbered from 1 to 16 beginning at the feed end.

#### NOTE

When the tanks are dry, it is more economical to fill with solutions after installing the racks. Otherwise, placing racks into full tanks would displace considerable solution and cause it to overflow into the sewer.

For convenience, begin with rack No. 1 and proceed as follows:

- a. Lift rack over side and slowly lower into tank.
- b. When rack is seated, check drive gear to be certain it meshes with worm gear on drive shaft. Set retaining latch on front side.
- c. Proceed with rack No. 2, etc., in same fashion.
- d. When all racks are installed, place crossovers in position. These are numbered from 1 to 15. Also the entrance and exit crossovers must be placed in their respective positions in the processing section.

#### NOTE

Follow steps a. through d. for a negative process. For a reversal process that uses the flasher assembly, do not place either a rack in tank 9 or crossovers between tanks 8-9 and 9-10.

### 2.1.3 Process Changeover

This operation must be carefully performed each time the processor is switched from negative to reversal processing and vice versa. Remove both bottom panels from the solution control panel and proceed with the following steps:

- a. If a different type developer will be used, drain tanks 1 through 4 by opening their respective TANK DRAIN valves on the solution control panel.

### NOTE

It is not necessary to drain tank 5 since the stop bath is common to all processes.

- b. Drain tanks 6, 7, 8, 9, 10, 11 and 13. (Tanks 12, 14, 15, and 16 contain wash water common to all processes.)
- c. Drain all five recirculation systems by opening bleeder valves on each recirculation pump.
- d. Remove filters from each system. Do not replace with fresh filter cartridge but do reassemble filter housing.
- e. When all tanks and recirculation systems are drained, close pertinent TANK DRAIN and bleeder valves for pumps.
- f. Remove crossover assemblies from those tanks involved in changeover operation and rinse them under running water.
- g. Fill tanks involved with water from hand-held hose.
- h. Activate all recirculation pumps on electrical control panel and allow recirculation of water for 15 minutes.
- i. Drain all involved tanks and recirculation systems as in steps a., b., and c. above.
- j. Replace crossovers on top of tanks.
- k. Disassemble each of the filter housings, insert new cartridges\* in each, and reassemble.
- l. Proceed with whichever process is desired.

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\* When setting up for a reversal process, be sure to install a "Cuno" filter cartridge in the housing for the bleach recirculation system.

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#### 2.1.4 Preparing for Negative Process

Before proceeding, be certain that the tank drain valves, whose knobs are located in four vertical rows on the bottom of the solution control panel (Figure 10), are all closed. Then proceed as follows:

#### **CAUTION**

Close all valves gently to prevent burring the valve seat and causing subsequent leakage. Also, never use the needle valves below the chemical solution flow meters as shut-off controls. These valves are for flow rate adjustment only.

- a. Place all five process changeover directional control valves in NEG. position.
- b. Place all three TANK-1 directional control valves on feed end of solution control panel in DEV. position.

#### **NOTE**

1. For special processes in either the reversal or negative processing mode, tank 1 may be set up to contain water for a pre-bath. In this event, place the TANK-1 valves in the WASH position.
2. In the negative mode only, developing time can be reduced by placing the flasher cross-over assembly between racks in tanks 1 and 3.
3. Remove the rack in tank 2.

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- c. Place directional control valves for DEV.-1, STOP, and FIXER in FILL position.
- d. After removing panel on front of tanks 5 through 8, open bypass valve in line connecting tanks 7 and 8.
- e. Begin quick fill of tanks as follows:
  - 1. Tanks 1 through 4: developer
  - 2. Tank 5: stop bath
  - 3. Tanks 6 through 11: fixer
- f. When each solution reaches its overflow point, turn respective directional control valve to REPLENISH.
- g. Turn off valve in line connecting tanks 7 and 8.
- h. Open the following water control valves: WASH TANK-12, WASH TANK-13, and WASH TANK-16. Do not open the water control valves for WASH TANK-1 or WASH TANK-8 for the negative process.
- i. Observe level of water in tanks 12 through 16 and, when all are full, adjust water control valves until each flow meter (Ratosite) indicates required flow rate.
- j. At electrical control panel, turn ON following controls:
  - 1. MAIN switch

**CAUTION**

Never operate the pumps controlled by the RECIRCULATION switches when the systems are dry. Such operation could damage the pump seals.

2. RECIRCULATION PUMPS BY TANK NUMBER: all five switches ON.

#### NOTE

Even though the solutions normally recirculated by three pumps (i.e., switches 6, 7, and 13) are required only for the reversal process, the added recirculation is useful during the negative process since it provides increased agitation and improved temperature control.

3. REPLENISHMENT: only NEGATIVE switch.
- k. On solution control panel, check air pressure gage for air to operate replenishment system. Pressure should be about 1 1/2 psi. If necessary, adjust pressure with regulator valve on top of panel at feed end of machine.
- l. Hold a sheet of product in entrance slot against right side of guide to trip air pressure switch and energize replenishment cycle. Adjust metering valves for DEV.-1, STOP, and FIXER to obtain desired flow rate on respective flow meters. Remove product from entrance slot when replenishment rates are established.
- m. Set DEV. TEMP CONTROL (see Section 1.2.2, item d.,) on solution control panel by opening controller\* door and moving red needle to temperature reading desired. It takes about five minutes for the developer to come up to temperature.

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\* This indicates and controls temperature of water entering the shell side of the developer heat exchanger. It may be necessary to offset the red needle plus or minus to get the desired developer temperature.

### NOTE

It is recommended that an accurate, long-stemmed dial thermometer be used to check developer temperatures in the tanks just before starting process.

### 2.1.5 Preparing for Reversal Process

Steps for readying the processor for the reversal process are detailed below:

- a. On solution control panel place all five process changeover directional control valves in REV. position.
- b. Place all three TANK-1 directional control valves on feed end of solution control panel in DEV. position.

### NOTE

For special processes in either reversal or negative processing mode, tank 1 may be set up to contain water for a pre-bath. In this event, place the three TANK-1 valves in the WASH position.

- c. Remove panel on front of tanks 5 through 8 and check bypass valve in line connecting tanks 7 and 8. Valve must be closed. Replace panel.

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- d. Place following directional control valves in FILL position:
  1. DEV.-1
  2. STOP
  3. BLEACH
  4. CLEAR
  5. DEV.-2
  6. FIXER
- e. Open TANK DRAIN valve number 9.
- f. Begin quick-fill of tanks with chemical solution as follows:
  1. Tanks 1 through 4: first developer
  2. Tank 5: stop bath
  3. Tank 6: bleach
  4. Tank 7: clearing agent
  5. Tank 10 and 11: second developer
  6. Tank 13: fixer
- g. When each solution reaches its overflow point, turn respective directional control valve to REPLENISH.
- h. Open all WASH TANK valves except WASH TANK-1 and -13.
- i. Observe level of water in tanks 8, 12, and 14 through 16. When all are full, adjust water control valves until each WASH flow meter indicates required flow rate.

#### NOTE

If fogging developer will be used to reverse the image instead of a flasher assembly, ignore steps e. and j. through l. Instead fill tank 9, 10 and 11 with fogging developer through the controls for second developer.



- j. Remove crossovers between tanks 8-9 and 9-10, and remove rack from tank 9.
- k. Set flasher crossover assembly in place on top of tank 9.
- l. Place flasher assembly onto crossover. Plug flasher power cord into receptacle on back of solution control panel and connect stack on top of flasher housing to exhaust port of cooling blower on back of solution control panel with flexible hose.
- m. At electrical control panel, turn ON following controls:
  - 1. MAIN switch
  - 2. RECIRCULATION PUMPS BY TANK NUMBER: all five switches ON.

**CAUTION**

Never operate the pumps controlled by the RECIRCULATION switches when the systems are dry. Such operation could damage the pump seals.

- 3. REPLENISHMENT (both switches ON).

**NOTE**

It is recommended that an accurate, long-stemmed dial thermometer be used to check both developer temperatures in the tanks just before starting process.

## **2.1.6 Initiating Dryer Operation**

Check the two thermostats (see Figure 13) in the top of the air dryer cabinet. The thermostat labeled TEMP should be set on the desired temperature in degrees F. It cycles the controlled heater element in the dryer system. The control marked ALARM should be set 5F higher.

On the electrical control panel (see Figure 4) at the feed end of the processor, set the BLOWER SELECTOR and the HEATER SELECTOR controls at their lowest values that will provide satisfactory drying of the product. Be sure to turn ON the DRYER DRIVE circuit breaker to energize the blower motor and heater elements. It takes approximately 10 minutes for the dryer to come up to operating temperature.

## **2.1.7 Preparing for Roll Film Process**

Two accessories are employed to process continuous web or roll films. These are a supply cassette which is mounted and used with the feed tunnel on top of the feed stand and a Portable Take-Up Assembly which is attached to the take-off end of the dryer cabinet. Both the cassette and Take-Up Assembly have maximum capacities of 1000 feet of standard base film.

**2.1.7.1 Loading the Cassette.** This operation should be done in a dark area separate from the processor room and where a splicer-rewinder unit is available. The cassette will accommodate any size standard AF type A spool up to 10 1/2-inch flange diameter and up to a capacity of 9 1/2-inch wide film.

Approximately 50 feet (or whatever length concurs with local practice) of leader is wound onto a spool using the splicer-rewinder unit. Film is spliced to the leader and wound onto the spool in additional lengths up to spool capacity. A few feet of leader should be added to prevent fogging of the film while the procedures described in the following paragraphs are accomplished.

When the spool is loaded, place it into the cassette and thread the leading end through the light trap. After locking the light trap, replace the cassette cover and tighten the locking screws. Next, splice about a 12-inch length of tab material (trimmed to film width) to the leading end of product with Mylar waterproof pressure-sensitive tape and back it into the cassette until only six inches protrudes from the slot.

2.1.7.2 Mounting the Feed Tunnel Assembly. This unit, which was designed to allow operation of the "A-9" film cassette and another type film magazine, is mounted on top of the feed stand interchangeably with the film guide tray that is used when processing sheet film. The same four machine screws, two on each side, fasten both the tray and feed tunnel onto the feed stand. To process roll film, the tray is removed and the tunnel assembly is placed in position and secured with the four screws.

2.1.7.3 Mounting a Loaded Cassette. The lip on front of the cassette light trap fits under the locking bar on the face of the feed tunnel and the bottom of the cassette sets on two pads on top of the feed stand.

Guide the cassette into position so that the end of the protruding tab enters the slot in the face of the feed tunnel. See Figure 3. In darkness or under a suitable safelight, open the hinged cover on top of

the feed tunnel and unlatch the cassette lightlock. The A-9 cassette has its own lightlock lever; there is a lever on the feed tunnel that is used to unlatch the special cassette. Advance the tab into the feed tunnel until it extends between the bottom guide roller and the upper roller attached to the end of the plunger. Next, close and secure the feed tunnel cover with its lock screw. Press down on the plunger and advance the tab into the processor by rotating the handwheel shaft on the side of the feed tunnel. The tab should be advanced past the pacer rollers. Processing can then start.

2.1.7.4 Attaching Portable Take-Up Assembly. Instructions for this step are found in the Operating Instructions for the Portable Take-Up. The manual is incorporated into the back of this manual.

## 2.2 PROCESSOR OPERATION

### 2.2.1 Processing for Standard Negative Image

- a. Check to see that all electrical controls are on.
- b. Set SPEED CONTROL to obtain desired FPM indicated on SPEED INDICATOR.
- c. Check DEV. TEMP thermometer on solution control panel and thermometer in top of dryer for required operating temperatures.
- d. If dryer and developer have reached operating temperatures, processing can begin.
- e. Check flow meters for DEV.-1, STOP, and FIXER during process to be sure that proper replenishment is occurring.
- f. Check flow meters for WASH TANK-12, -13, and -16 to be sure proper water circulation is occurring.